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Camp Geronimo: Evaluating the Influence of an Animal Assisted Intervention Based Summer Camp on Social Participation in Children with Intellectual and Developmental Disabilities

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CAMP GERONIMO: EVALUATING THE INFLUENCE OF AN ANIMAL ASSISTED INTERVENTION BASED CAMP ON SOCIAL PARTICIPATION IN CHILDREN WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES

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By

Joelle Ruggeri

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ABSTRACT

CAMP GERONIMO*:* EVALUATING THE INFLUENCE OF AN ANIMAL ASSISTED INTERVENTION BASED CAMP ON SOCIAL PARTICIPATION IN CHILDREN WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES

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Dissertation supervised by Dr. Meghan Blaskowitz

Research regarding animal assisted intervention (AAI) has found that it can be an effective intervention towards promoting positive social participation in children with intellectual and developmental disabilities (IDD). A quality improvement project was implemented at The Barn at Spring Brook Farm, where children ages 2-12 with IDD are able to participate in AAI activities. The purpose of this project was to evaluate the Barn's Camp Geronimo, a six-week long summer camp program, and its impact on the social participation of participants using the *Home & Community Social Behavior Scales* (HCSBS). The study findings showed positive results, with statistically significant change identified on *Scale A*: Social Competence, and minor positive change on *Scale B:* Antisocial Behavior, of the HCSBS.

DEDICATION

I dedicate this paper to the children at The Barn at Spring Brook Farm.

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I would like to acknowledge and thank the following important people who have helped me during this project, and through out my journey as an occupational therapy student.

First, I would like to thank Dr. Meghan Blaskowitz for her guidance, patience, insight, and humor as my mentor for this research project and throughout graduate school.

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TABLE OF CONTENTS

Page

LIST OF TABLES, FIGURE, ILLUSTRATIONS, OR GRAPHS

CHAPTER ONE: The Practice Scholar Capstone Project

The American Association of Intellectual and Developmental Disabilities (AAIDD) (2018) defines developmental disability as an umbrella diagnosis, which includes intellectual disability as well as other disabilities that can be observed during childhood. Chronic and severe, developmental disabilities may be physical, such as cerebral palsy, cognitive, as in autism spectrum disorder, or both (AAIDD, 2018). An intellectual disability is specifically defined as being "characterized by significant limitations both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behavior, which covers a range of everyday social and practical skills. This disability originates before the age of 18" (AAIDD, 2018, para. 1). Research conducted between 2006-2008 estimates that approximately one in six children have a developmental disability (Boyle, Blumberg, Boulet, Cohen, Kogan, Schieve, Visser, & Yeargin-Allsopp, 2011). More recently, the Centers for Disease Control and Prevention (CDC) (2018) estimated that 1 in 68 children in the United States has a diagnoses of autism spectrum disorder (ASD). According to the American Psychiatric Association (APA) (2013), ASD "is characterized by persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interaction, and skills in developing, maintaining, and understanding relationships" (p.31)

Many children with intellectual and developmental disabilities (IDD), such as those with autism spectrum disorder (ASD), have deficits in the occupation of social participation as a consequence of their disabilities. (Minnes, Perry, & Taheri, 2016). The *Occupational Therapy Practice Framework* (OTPF) (2014) defines social participation as:

> The interweaving of occupations to support desired engagement in community and family activities as well as those involving peers and friends; involvement in a subset of activities that involve social situations with others and that support social interdependence. Social participation can occur in person or through remote technologies such as telephone calls, computer interaction, and video conferencing (AOTA, p. s21).

Studies have found that animal assisted intervention (AAI) can have a positive influence on the social participation of children with IDD (Butler et al., 2015). Animal assisted intervention is an emerging practice defined as "a goal oriented and structured intervention that intentionally includes or incorporates animals in health, education and human service (e.g., social work) for the purpose of therapeutic gains in humans" (Internal Association of Human-Animal Interaction Organizations, 2014, p. 5). AAI is an umbrella term that also includes animal-assisted activities (AAA), which are informal, but goal-oriented interactions with an animal conducted for educational, recreational, or motivational purposes by a person with at least introductory training (IAHAIO, 2014). AAI compliments occupational therapy, as animals can be used as an intervention tool to target occupational performance for people across the lifespan, including social participation in children with IDD. While new research is emerging, evidence about AAI is still limited, especially on AAI in regards to social participation among children with IDD. The general themes summarizing existing studies conclude that there are positive/mixed results regarding AAI's effectiveness on influencing social participation in children with IDD, and that the positive trends in the data give evidence for the need for further, more extensive research about AAI for this population. Considering the high prevalence of children with IDD, and the true nature of the effectiveness of AAI being unknown, additional research is needed to continue

to gather information on how to utilize AAI in the most effective manner to promote positive outcomes, and to expand its use in allied health fields such as occupational therapy.

Extracurricular activities can help promote social skills training and social inclusion/participation, yet despite a large number of children diagnosed with IDD, this population has a limited access and availability to extracurricular activities (A. Nowoswiat, personal communication, April 13, 2018). The Barn at Spring Brook Farm is a non-profit organization located in West Chester, Pennsylvania. In a video on The Barn at Spring Brook Farm's website, it is stated that Chester County, Pennsylvania, the county in which the Barn is located in, has "approximately 4,000 children with disabilities, plus thousands of children with Autism" (The Barn at Spring Brook Farm, 2018, 00:30). The Barn's mission is "to enrich the lives of children with disabilities through animal-assisted activities" (The Barn at Spring Brook Farm, 2018, para 2). This organization serves children of various abilities through after-school, summer camp, and other programs. The Barn provides children ages 2-12 with IDD an extracurricular environment where AAA programming and special services are offered. The services the Barn offers are unique in that the goal is not provision of direct therapies, but rather to provide the children with a safe, fun space in which the activities and environment promote therapeutic outcomes (The Barn at Spring Brook Farm, 2018). During a needs assessment of the Barn (see Appendices B, C, D & E for information regarding findings and outcomes of the needs assessment), the scope and format of the services provided were discussed with Barn staff. With the exception of field trips and family socialization events, the two main programs provided through the Barn are individual AAA sessions offered throughout the year for children ages 2-12, and Camp Geronimo. Camp Geronimo is a six-week summer program offered for children ages 6-12 and designed/directed by an occupational therapist and physical therapist, both with

over 20 years of pediatric experience. Testimonials from parents/guardians reveal that a majority of them send their children to the Barn with the primary hope that it will be fun for their children and provide them with opportunities to increase their social participation skills. Currently, the Barn does not use any formal evaluation or goal setting processes to measure social participation outcomes for camp participants. Further discussions with administrators and staff revealed that parents and staff observe noticeable progress in self-esteem and other aspects of social participation among Barn participants, as well increased excitement and joy among the children.

Information regarding the Barn's funding structure was also discussed during the needs assessment. The Barn receives approximately one-third of its funding through grants, but relies on donations, program fees, and fundraising for the remainder of it expenses (E. McClure, personal communication, February 6, 2018). However, the program costs are low compared to the expenses for up-keep of the Barn. The Barn also offers scholarships to families, taking into account the number of outside therapies and other services a child requires in addition to a family's income and socioeconomic status (A. Nowoswiat, personal communication, April 13, 2018). The Barn would benefit from additional grant funding, but often grant funders are more inclined to give money to sites that use evidenced-based, formal evaluation data and goal tracking processes that demonstrate the impact of their services for participants. After completion of the needs assessment, it was apparent that the Barn provides rare extracurricular services that help many children with IDD and that, with more funding, the Barn could improve and expand its services to increase its effectiveness of changing the lives of children.

A program evaluation of the Barn's influence and impact on social participation was implemented to generate data that could demonstrate whether the Barn fosters positive change in this area of occupation. Utilizing the *Home & Community Social Behavior Scales* (HCSBS), a

rating scale assessment that measures social participation among people ages 5-18, participants in Camp Geronimo were evaluated prior to and following camp to assess for change in their social participation and social behaviors (Brookes Publishing, 2018). Another goal of the evaluation program was to generate evidence that could be incorporated into the Barn's future grant applications, as well as add to the existing body of research regarding AAI.

CHAPTER TWO: Review of Relevant Literature

Introduction:

Occupational therapists work with people across the life span on various occupational performance areas and in various settings. Occupational therapy is unique in that it is "the therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings" (AOTA, 2014, S1). For many children with an IDD, such as ASD, social participation is an occupation that is challenging for them, and which occupational therapy can be beneficial in promoting. AAI is an umbrella term for different forms of goal-oriented intervention that intentionally incorporate animals in order to promote therapeutic gains in humans (IAHAIO, 2014). Research regarding AAI is limited, but the purpose of AAI and the findings of existing research demonstrate that it is an intervention type that is compatible with the goals and mission of occupational therapy (IAHAIO, 2014; AOTA, 2014). Despite limited research, existing literature suggests that AAI can be an effective means of promoting positive social participation in children with IDD.

Synthesis of the Relevant Literature:

A study by Chamberlain (2010), focused on children with ASD in the elementary school setting, discussed that due to deficits in the area of social participation, children with ASD are at

a high risk of social isolation at school compared to typically developing peers, and that this isolation increases as the child gets older. This study notes that children with ASD show a desire for friendship, but are at risk of issues in regular classrooms, such as neglect and rejection from peers, fewer friendships, and increased loneliness compared to typically developing peers (Chamberlain, 2010). This study presents information regarding the deficits in social participation experienced by children with IDD, particularly those with ASD, in a school setting. As school is an environment where children experience a high degree of exposure and an opportunity for growth in social skills, this information supports the need for interventions, such as AAI, that can help promote positive change in social participation.

Several studies have been conducted with a focus on social participation among children with IDD and AAI. These studies incorporate a variety of different animals in many different settings. A systematic review by Butler et al. (2015) identified 20 studies that were related to animal assisted intervention. The review found that these studies had either mixed or positive results on the effectiveness of use of animals in therapeutic intervention. The study concluded that additional research is needed to further explore the trends that indicated a positive influence of AAI on social participation.

Several other studies completed found common themes regarding the influence of AAI on the social participation of children with IDD. The first theme was an increase in language expression among children with an IDD when in the presence of an animal. This was the case in a study completed by Fortney, Sams, & Willenbring, (2006) in which greater social participation and language use were seen during occupational therapy (OT) sessions that incorporated animals compared to in traditional OT sessions. Another study by Boyer and Mundschenk (2014) saw

more sustained social interaction between the child participants with language impairments when placed in conditions with a live cat versus a toy cat.

An additional theme found a decrease in negative social functioning after participation in AAI. For instance, a study by McCune, McKenzie, O'Haire, & Slaughter, (2014) found a decrease in social withdrawal behaviors post participation in the AAA program. Another case study by Alison (2010) found that, although not statistically significant, there were decreases in negative social functioning behavior scores on the *Social Responsiveness Scale* among three children with ASD after interactions with dogs.

The third theme was an increase in positive social behaviors after interaction with animals took place, with many of these studies showing a positive change on a standardized social participation assessment. For example, McCune and colleagues (2014) found not only a decrease in social withdrawal behaviors, but also an increase in social skills and social behaviors after participation in a classroom AAA program. Another study utilized the *Autistic Diagnostic Interview, Revised* (ADI-R) with 260 families to evaluate the influence that the arrival of or presence of a pet from birth in a family with a child with ASD has on the child's pro-social behaviors over time. Results showed greater pro-social behaviors in the groups with pet arrivals (Deleau, Grandgeorge, Lazartigues, Lemonnier, & Tordjman, 2012). Using a pre-determined research protocol during sessions, as well as the Pyschoeducational Profile Revised (PEP-R), resulted in an increase in pro-social behaviors among ten children with a diagnosis of pervasive developmental disorder when interactions with live dogs took place than with toy dogs (Farnum & Martin, 2002). Finally, Pongasksri, Sasat, & Satiansukpong (2017) used the *Vineland Adaptive Behavior Scales* to complete four different studies that focused on introducing the Thai Elephant-assisted Therapy Program (TETP), which used elephants as a therapeutic tool for children with

ASD and other disabilities. The researchers found improvements in areas, namely social functioning, following the program (Pongsaksri, Sasat, & Satiansukpong, 2017).

Some research has also been found to support the positive impact of barn and summer camp settings in promoting social participation in children with IDDs. This is worth noting as The Barn at Spring Brook Farm is a combination of both. Ferwerda-van Zonneveld, Kijilstra, & Oosting (2012) interviewed farmers who had care farms and found that farms are a good "break" area for children with ASD. The findings concluded that to be considered a "break" area, farms require certain characteristics such as being small and quiet (much like The barn at Spring Brook Farm). A study done by Bader, Barry, & Walker (2010) focused on 12 children with ASD who attended a four-week summer camp that was designed to promote social skills as one of its main goals. A pre-post administration of the *Adaptive Social Skills Measure* was used to identify if therapists and parents perceived changes in social behaviors after camp. Results of the study indicated evidence that summer camps may play positive roles in enhancing social participation in children with ASD (Bader, Barry, & Walker, 2010). (See Table 1.0 regarding the key studies that influenced this program evaluation study).

Anecdotal evidence on the impact of AAI comes from parents who specifically utilized the services at the Barn. In 2018, the *Philadelphia Inquirer* published an article including multiple parental testimonials regarding the impact of services at the Barn on their children's functioning. The article noted that some parents "turn to AAI in frustration, even desperation" (Giordano, 2008, p. G4). In describing her son's social participation, one parent stated, "Before the Barn, he wasn't able to respond to friendship" (Giordano, 2018, p. G4) and that activities with the animals at the Barn became his "social bridge (Giordano, 2018, p. G4). Another parent noted that her daughter had "… become less aggressive…she's in a calm mood when she's there,

and it even carries over into school the next day, sometimes two days after. She's just more calm. And happy" (Giordano, 2018, p. G1). While this is not hard scientific evidence, these parents' observations of notable improvement in their children's social participation skills support AAI's effectiveness and the need for implementation of a formal evaluation and goal tracking program at the Barn.

In addition to these testimonials in the *Philadelphia Inquirer*, Dr. Page Buck of West Chester University completed a study in which she interviewed several parents of children who attended the Barn's individual program, in order to gain an understanding of the change parents saw in their children after enrolling them at the Barn. Her study had three main findings: 1) There is a bi-directional relationship between animals and children with ASD; the children have more intuitive relationships with the animals than those that they have with humans, and the animals have an intuitive sense of the children's wants and needs; 2) Being around animals increased frustration tolerance, decreases anxiety, and increases expression both verbally and non-verbally among program participants; and 3) "Parents report feeling a new and deep sense of hope about their children's long term outcomes and happiness" (Buck, n.d. para. 3) after their participation in the Barn's programs. Dr. Buck's findings are supportive of not only the benefits of AAI for children with ASD generally, but also the specific effect of Barn programs on these children.

The previously mentioned studies all shared similar limitations as well as similar findings. These studies lacked blinding, consisted of small sample sizes, did not always implement standardized assessments, and lacked diversity of diagnoses among the participant groups. These factors make it difficult to generalize the results of the studies to a larger population. Limited time and small population sizes lead to convenience sampling being utilized

in recruitment of participants and resulted in subsequent small sample sizes. Additionally, blinding was not possible for these studies. However, the children recruited to participate in the current program evaluation had a wide range of diagnoses, abilities, and demographic characteristics, which makes this study unique compared to others completed before it. In addition, this program evaluation is intentionally designed to be sustainable; one that can continue to be implemented during future Camp Geronimo programs as well as in individual programs offered at the Barn. Since the data generated will contribute to future grant applications for increased funding of the Barn's programs, a program improvement portion is factored into the program evaluation design so that continued improvement can be made to the program over time to increase its effectiveness and generate data that can be potentially be generalized to a larger population**.**

Table 1

Key Studies Informing the Study

Citation (1st author & year only)	**Study Purpose/Research Question**	**Design**	**Sample**	**Data Collection Strategies**	**Findings that Inform This Study**
Alison (2010)	Effects of incorporating canine intervention activities at home on social participation of children with ASD	Case Study	3 children with ASD	Observation-based scale	ASD, canine intervention activities, social participation
Bader (2010)	Observe changes in social participation skills of children with ASD after a summer camp program	Case study	12 children aged 3-7 with diagnoses of ASD	Observation-based scale	Key themes: Social participation, Peer relations, summer camp, ASD

Boyer (2014)	Animal assisted therapy facilitating social communication in children with language impairments	Case Study	Three children ages 4-8 with language impairments	Observation-based scale	Language impairments, animal assisted therapy, social communication
Butler (2015)	Systematic Review about 20 studies involving AAI and children with ASD	Systematic review	20 studies involving AAI and ASD	Systematic review	AAI, ASD, social participation
Chamberlain (2010)	Inclusion of children with ASD in typically developing classroom	Case study	79 children with ASD	Observation-based scale	Isolation, Peer relations
Deleau (2012)	Effectiveness of pet ownership on children with ASD	Non-randomized cohort study	260 individuals with ASD with life-long pets, introduction of pets, or no pets	Observation-based scale	Pet therapy, ASD, social participation
Farnum (2002)	Presence of dog vs toy dog on pro-social behaviors in children with PDD	Non-randomized cohort study	10 children with PDD	Observation-based scale	PDD, pro-social behaviors, AAI
Fortney (2006)	OT sessions incorporation animals vs traditional OT sessions on the effect of social participation in children with ASD	Non-randomized cohort study	22 children with ASD	Observation-based scale	Social participation, ASD, OT

McCune (2014)	Social functioning of children with ASD after introduction of AAI in a classroom	Non-randomized cohort study	64 students with ASD in 41 Australian classrooms	Observation-based scale	AAI, ASD, social participation
Pongsaksri (2017)	Effectiveness of incorporating elephant activities with children with ASD	Case study	4 studies with children with ASD and other disabilities	Observation-based scale	Elephant activities, ASD

Since this project aimed to use a standardized assessment to measure social participation in order to generate quantitative data on the effects of Camp Geronimo, an appropriate assessment tool had to be identified. There are several assessments that measure social participation in children with and without IDD. The *Home & Community Social Behavior Scales* (HCSBS) is a standardized, norm-referenced rating scale for children in Kindergarten-12th grade that evaluates a child's social participation risk behaviors and strengths (Brooks Publishing, 2018). This assessment is straightforward, and can be completed in less than 10 minutes with ease by a parent, teacher, etc., the norms are based on children with a wide range of disabilities, and it can be administered by a professional with basic understanding of psychological and educational testing (Brooks Publishing, 2018). Unlike many other social participation assessments, the HCSBS focuses on the child's social participation at home and in the community, rather than in school. This aspect of the assessment is especially appropriate for the Barn as it is a community-based setting (see appendix G for a citation giving an example of the HCSBS form).

Multiple studies have found that the HCSBS has good psychometric properties, supporting implementation of this assessment at the Barn (Bourke-Taylor et al., 2015). For the

four subscales on the HCSBS, the alpha and split-half coefficients fall into a range from .91-.95, indicating that the assessment has strong internal consistency (Caldarella & Merrell, 2002). Test-retest coefficients were also high, from .82-.91 (Caldarella & Merrell, 2002). The interrater reliability is .85-.86 for scores that fall under the *Social Competence* domain, and .64-.73 for the scores that fall under the *Antisocial Behavior* domain. However, Caldarella and Merrell point out that these results are still positive given that "interrater reliability coefficients obtained with child rating scales are always considerably lower than internal consistency coefficients, and they are usually lower than test re-test coefficients and the alternate form coefficients" (Caldarella & Merrell, 2002, p. 57).

In a study by Lund & Merrel (2001), 180 children's social behaviors were rated by parents using the HCSBS. These children ranged in age from 6-12. One third of the children had learning disabilities, another third had emotional behavioral disorders, and the final third were general education students without disabilities. Results among the three groups showed that children with emotional behavioral disorders scored highest in antisocial behaviors and lowest in social competence, while general education children scored lowest in antisocial behaviors and highest in social competence. Boelter, Calderella, Gentry, Merrel, & Streeter (2001) also analyzed three studies in which five different rater-scales of social behavior in children were used, and found the validity of the HCSBS was good in comparison to other similar rating scales. The cost, time, ease of use, fit-to-context, and good psychometric properties supported by other studies all defend the decision to implement the HCSBS into this program evaluation.

Also worth noting is a study by Hukkelber & Ogden (2016) in which 551 parents of children ages 2-12 who displayed emerging or present behavioral problems participated in order for researchers to investigate the dimensionality of the HCSBS. Their findings found lower

levels of social competence were reported for boys than girls, and that social competence decreased with age, whereas antisocial behavior increased with age (Hukkelber & Ogden, 2016).

Summary:

The literature that informed this evaluation project suggests that the use of AAI can demonstrate positive improvements in social participation for children with IDD. The literature regarding AAI and social participation in children with IDD overwhelmingly addresses ASD, which is a diagnosis notable for social participation impairments (APA, 2013). The majority of research has limitations including small sample size and lack of blinding, which is common in preliminary studies. This project sought to evaluate the influence of Camp Geronimo on the social participation of its participants through a pre-/post- administration of the HCSBS. Data generated from this program evaluation provides evidence regarding programmatic outcomes that can be used to help obtain funding to sustain the Barn and add to the body of research on AAI.

CHAPTER THREE: Capstone Project Methods

Project and Setting:

This project was an evaluation of The Barn at Spring Brook Farm's existing AAI-based camp program, Camp Geronimo. The goal of this program evaluation was to assess the influence of AAI on the social participation of children with IDD who participated in Camp Geronimo. The target group for this evaluation consisted of parents/guardians of the children who were enrolled to participate in at least one of six weeks of summer camp at Camp Geronimo's 2018 program. Convenience sampling was used to recruit participants from the greater camp program due to time and resource constraints.

Program Description:

Sample or Population:

The population identified for this project was 16 Camp Geronimo participants. Participants of this study consisted of at least one parent/guardian per enrolled camper. Inclusion criteria included: the child and parent must be enrolled in the Summer 2018 Camp Geronimo program and parent participants had to have been literate in English in order to read and interpret the directions of the HCSBS assessment.

Participants were recruited two weeks prior to the start of Week One of Camp Geronimo. Participants were recruited via a mailed letter sent to all parents/guardians of a child enrolled in the Summer 2018 Camp Geronimo program at The Barn at Spring Brook Farm. A demographic questionnaire was also included with the recruitment letter and gathered information on: the child's gender, child's age, child's ethnicity, number of siblings, description of the child's diagnosis/disability, number of miles traveled to the Barn, annual household income, number of additional extracurricular activities the child participated in, description of other extracurricular activities their child participated in (if applicable), number of years the child attended Camp Geronimo, and the number of years their child participated in the Barn's other programs (see Appendix I for an example of the demographics survey).

Primary Goals and Objectives of the Program/Project:

There were several primary goals and objectives of this project. The **first goal** was: Over the six-week course of the summer week program, 90% of children in the Barn's summer camp program will be evaluated using the *Home and Community Social Behavior Scales* (HCSBS).

Objective One for this goal was: In one month, the *Home and Community Social Behavior Scales* (HCSBS) and a demographics sheet will be mailed to all parents of children participating in Summer 2018 Camp Geronimo in order to recruit program evaluation participants.
Objective Two was: Following the six-week duration of Camp Geronimo, all data generated from this evaluation will be gathered into a database to be statistically analyzed.

The **second goal** of this project was: In four months, results generated from the evaluation will be compiled so that quantitative data can be cited by Barn staff when drafting future grants and persuade grant funders to provide additional funding to the Barn.
Objective One for this goal was: in one month all staff and/or board members at The Barn at Spring Brook Farm will be educated about the purpose of this program evaluation in order to inform all staff about the data from this program evaluation can influence external funding.
Objective Two for this goal was: In two months, a list of potential grant funders will be compiled for staff to reference when drafting future grants.

The **last goal** for this project was: In three months, staff at The Barn at Spring Brook Farm will demonstrate an effective understanding of how to score and statistically analyze and interpret the HCSBS assessments with 100% accuracy in order to continue the program evaluation with the Barn's individual program (without the doctoral student present).
Objective One for this goal was: In four months, staff will demonstrate an understanding of how to score the HCSBS with 100% accuracy.
Objective Two was: In four months, staff will demonstrate an understanding of how to statistically analyze and interpret the results of the HCSBS with 100% accuracy.

Program Structure: (See Appendix F)

The structure of this program evaluation project can be broken into multiple steps. First, the DEC student recruited program participants based on specific program inclusion criteria. Participants were recruited via letter and email from the DEC student, with an explanation of the study, a demographic sheet to be completed by the parent, and a copy of the HCSBS. Next, the parent/guardian completed a copy of the HCSBS and filled out the demographic sheet prior to their child's first day of camp. The parent/guardian completed a second copy of the HCSBS and returned it to the DEC student at the end of the camp program, but prior to their child's last day of camp. At the completion of camp for the summer, the DEC student analyzed all results of the completed pre-/post-HCSBS assessments and demographics sheets received from program participants, using a created Excel database and statistical analysis software.

The DEC student then reviewed and coded a parent/guardian satisfaction survey, as well as a volunteer/counselor satisfaction survey, in order to understand aspects of camp that worked well and what could be improved upon for future camp programs. The DEC student then educated the Program Director at the Barn and assessed her understanding of the scoring and data analysis processes required to score and statistically analyze HCSBS results. This staff training ensured that the Barn's staff will be able to replicate this program evaluation in the future when the DEC student is no longer on site. Following data and survey analysis, the DEC student presented data to the Barn to be used as evidence of positive change following participation in Camp Geronimo, and for use in advocacy and persuasion of funders in future grant applications.

Theoretical, Conceptual or Quality Improvement Framework:

The occupational therapy theory used to guide this program was the Person-Environment-Occupation-Performance model, also known as PEOP. This model focuses on the interaction between a person, his/her environment, and his/her occupation, and how this interaction ultimately affects performance (Cole & Tuffano, 2008). Relating the PEOP model to this program evaluation, the person was the child, who can be assessed based on their various performance aspects: physiological, cognitive, spiritual, psychological, and neuro-behavioral. The environment was the Barn -- not only the physical and social aspects of the Barn, but also the cultural and programmatic structures of the Barn. The occupation was the child's social participation in Camp Geronimo. The transactional relationship between these factors had an effect on the occupational performance of the child. The occupational performance aspect specifically focused on was the occupation of social participation.

This project considered several factors in the PEOP model. At the person level, this project was interested in understanding intrinsic factors, such as cognitive, psychological, and neurobehavioral performance skills. It evaluated Camp Geronimo to identify positive influences on social behavior and social skills that fall under the broad occupation of social participation, such as communication skills, sharing, being kind to others, etc., which were observed in the form of a positive change in HCSBS scores. This program evaluation project also aimed to target the environmental component and organizational processes of the Barn as this program evaluation was a modification to the existing program structure and will continue to be implemented in future iterations of the summer camp program. This program evaluation component at Camp Geronimo assessed change in social participation skills by implementing a standardized assessment process prior to and following camp participation. This project also

influenced the structural processes at the Barn in several ways. This program introduced a data-based approach using quantitative data analysis, which can make the organization's programs more evidence-based and legitimate. Although there are township ordinances that would inhibit the physical expansion of the Barn at this time, data from this program evaluation can help persuade grant funders to increase funding, in addition to raising awareness about Camp Geronimo and the services and opportunities provided at the Barn. The addition of these two aspects will change the environment at the Barn and potentially bring more opportunities for resources and program improvements. Ideally, continuing the program evaluation in future camp programs, and potentially incorporating it into the Barn's individual programs, will generate valuable data for the Barn and help increase funding to hire a full-time OT at the Barn. A full-time OT could provide valuable knowledge and skills when working with the children in addition to providing more advanced training to staff and counselors on topics such as sensory integration, behavior management, proper positioning and restraints, and modifying activities to provide children with a "just right challenge."

Program Implementation:

The program evaluation was implemented beginning in May 2018 when the on-site student's DEC fieldwork began. During this time, letters to all parents recruiting participants were sent, including the HCSBS and a demographics sheet to be completed by the parents. Each parent who chose to participate brought the completed demographics sheet and a copy of the HCSBS to their child's first day of camp. Parents completed and returned a second copy of the HCSBS upon the end of their child's last day of camp. The DEC student collected and gathered all results of the HCSBS and demographics sheets and inputted them into an Excel spreadsheet. All data analysis was completed in the Program Director's office at The Barn at Spring Brook

Farm. Data was de-identified and coded in order to keep participant's information confidential. Data analysis then took place to determine if statistically significant changes occurred on HCSBS scores over the duration of the child's participation in camp. Upon the completion of camp, the program director participated in statistical analysis training and completed a mock scoring of the assessment and demographic sheet to demonstrate their understanding of how to administer the assessment and statistically analyze the data findings in the future. Anonymous satisfaction surveys were given to all program participant parents/guardians after camp (see Appendix H for an example of the parent satisfaction form).

This program met the population's needs because data from the HCSBS assessment provided evidence that AAI can positively influence social participation in children with IDD. In addition, since the Barn currently has no formalized outcome assessment processes implemented, this program evaluation brought a new level of evidence-based legitimacy to their current programming. Review of HCSBS results were used to provide suggestions for improvement to Camp Geronimo and other Barn programs.

Budget expenses included the HCSBS manual, copies of the HCSBS, postal stamps and envelopes for initial/return mailings, office paper, and printer ink. Tools that were used during program evaluation were the HCSBS and a demographics sheet.

Capstone Project Evaluation Tools:

The *Home and Community Social Behavior Scales* (HCSBS), a standardized and norm-referenced rating scale for children Kindergarten-12th grade that evaluates a child's social participation risk behaviors and strengths, was used during this study. As previously stated, the HCSBS' psychometric properties have found to be sound (Caldarella & Merrell, 2008). It is

worth noting that there is limited research regarding this assessment, so additional research would help to increase its reliability.

Data Analysis Plan:

Descriptive statistics were analyzed including frequencies and percentages of participants' gender, ethnicity, primary diagnoses, distance traveled to the Barn, and annual household income. Normality of the data were determined before proceeding to further statistical analysis. Normality tests were run on data from the six subscales of the HCSBS (Scale A and its two subscales, and Scale B and its two subscales). A paired samples T-test would be used if the HCSBS data met the assumptions of normality; if not, a Wilcoxon Signed Rank test would be utilized. Depending on the final sample size, the statistical analysis tests to be used might have changed. This data analysis process was completed using SPSS. All data from the demographic sheets and HCSBS was organized, coded, and de-identified in this statistical analysis software program. Coding for the parent/counselor surveys took place in Excel, where all data sources remained anonymous.

Capstone Project Evaluation Processes:

The data collection process went as follows: parents were sent a letter requesting them to participate in the program evaluation project. Parents who agreed to participate in this project filled out a demographics sheet and one copy of the HCSBS, and returned them to the DEC student at the start of their child's first day at camp. Parents then completed a second copy of the HCSBS and returned it to the DEC student by then end of their child's last day of camp. A data collection spreadsheet was developed by the DEC student, and results of the HCSBS were inputted into the database. Statistical analysis then took place in SPSS, and the data was

organized in preparation for use in future grant applications. (See Figure 1.0 for a visual representation of the program evaluation structure).

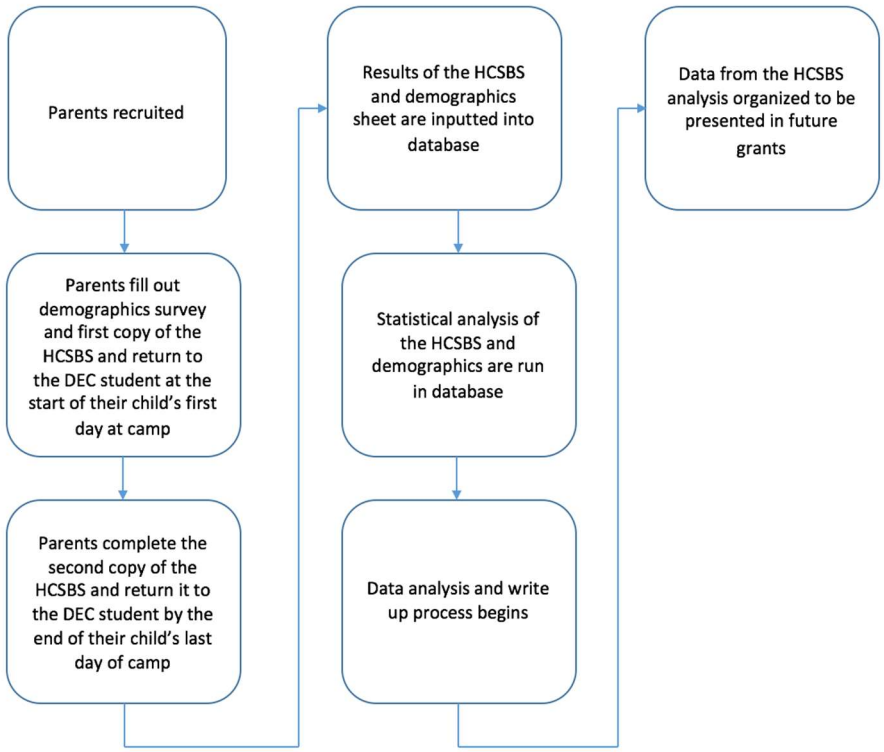

Figure 1.0 **Structure of the Camp Geronimo Program Evaluation**

Summary:

Specific methods were chosen to implement this program evaluation in order to maximize program participation and keep the program implementation in an organized timeline. These methods tested the impact of program goals because they allowed the DEC student to recognize where projected change should be made in further implementation of the program.

CHAPTER FOUR: RESULTS

Broad Overview of Findings:

At the completion of camp, there were 16 child/parent subjects in this program evaluation of Camp Geronimo. Parent participants of children who participated in Camp Geronimo completed the HCSBS prior to and following their children's attendance at camp. Thirteen additional parents completed the pre-test HCSBS, but were lost to follow-up due to either failing to provide a completed post-test HCSBS form to the standards of the assessment manual, or not returning the second (post-test) copy of the HCSBS at all. All attempts were made to contact these parents via email and/or phone in an attempt to obtain missing data, but they did not respond within the time span of the DEC placement. Out of the six scales on the HCSBS (*Scale A* included the subscales of: *Peer Relations*, *Self-Management/Compliance*, and a *Social Competence Total* score, and *Scale B* included the subscales of: *Defiant Disruptive*, *Antisocial/Aggressive,* and an *Antisocial Behavior Total* score), statistically significant changes were found between pre- and post-HCSBS scores on all three subscales of *Scale A* (*Peer Relations, Self-Management/Compliance, and Social Competence Total* score).

Description of participants:

Complete data was collected from a total of 16 total participants for this program evaluation project. Participants were all parents/caregivers of a child with an intellectual and/or developmental disability who was enrolled in at least one week, (and potentially up to four weeks) of Camp Geronimo. Parents completed a demographics survey regarding their child, and some information about their family. Descriptive statistics revealed that, of the children whose parents participated in this program evaluation, most were male (81%), White/Caucasian (81%), and had a primary diagnosis of Autism Spectrum Disorder (75%). The mean age of the child

participants was 8.8 years old (SD=1.9). On average, most participants participated in one week of camp (81.3%), and this was their first year attending Camp Geronimo (40%). Thirty-one percent of the children lived within close proximity to the Barn, traveling less than 10 miles to get there. The majority of the participants came from high earning households - almost 38% were from households with annual incomes of $100,000+ per year. See *Table 2* for a complete summary of individual-level characteristics of the children and their families who participated in this program evaluation.

Table 2

Descriptive Statistics of Participants

Child Demographics	Total Sample (n = 16)
Age, mean(SD)	8.8 (1.9)
Number of Weeks Participated in Camp, n(%)	
1 Week	13 (81.3)
3 Weeks	2 (12.5)
4 Weeks	1 (6.3)
Number of Years Participated in Camp, n(%)	
1-2 Years	8 (50.0)
3-4 Years	4 (25.0)
5-6 Years	3 (18.8)
Not Reported	1 (6.3)
Gender, n(%)	
Male	13 (81.3)
Female	3 (18.8)
Ethnicity, n(%)	
White/Caucasian	13 (81.3)
Biracial	3 (18.8)
Primary Diagnosis, n(%)	
Autism	12 (75.0)
Developmental delay	1 (6.3)
Other neurological impairment	1 (6.3)
ADHD	1 (6.3)
Other	1 (6.3)
Distance Traveled to the Barn, n(%)	
Less than 10 miles	5 (31.3)
16-20 miles	4 (25.0)
11-15 miles	3 (18.8)
21+ miles	2 (12.5)
Not reported	2 (12.5)
Annual Household Income, n(%)	
$100,000+	6 (37.5)
Between $71,000-$90,000	3 (18.8)

Between $51,000-$70,000	3 (18.8)
Less than $30,000	1 (6.1)
Prefer not to answer	3 (18.8)

Specific Description of Findings:

Upon data analysis, it was found that *Scale A* of the HCSBS mean total scores improved from pre-test (M=81.5, SD=20.5) to post-test (M=86.3, SD=20.3). For *Scale B* of the HCSBS, there was also an improvement in mean total scores (for *Scale B,* this means total scores went down) from pre-test (M= 64.6, SD=16.1) to post-test (M=63.5, SD=17.0). Data reported on five of the six scales of the HCSBS met normality assumptions, as determined by a Shapiro-Wilk test, with the exception of the *Scale B: Antisocial/Aggressive* scale. Paired samples t-tests were run on the data from each subscale of the HCSBS, with the exception of the *Antisocial/Aggressive* scale, for which a Wilcoxon Signed-Rank test was utilized for non-normally distributed data. Results found that, among the six scales, every scale in *Scale A* (*Peer Relations, Self-Management/Compliance,* and the *Social Competence Total* score) produced statistically significant results. There was a significant difference in scores for the *Social Competence Total* scores from pre-test (M=81.5, SD=20.5) to post-test (M=86.3, SD=20.3); t(15) = 3.089, p = .007. The *Peer Relations* scale showed a significant difference in scores from pre-test (M=42.5, SD=14.4) to post-test (M=44.8, SD=14.8) as well; t(15) = 2.509, p =.024. There was also a significant increase in scores on the *Self-Management/Compliance* scale from pre-test (M=39.0, SD=6.8) to post-test (M=41.5, SD=6.4); t(15) =2.825, p =.013. While there was no statistically significant change in *Scale B* scores, a positive change from pre- to post-test HCSBS scores still existed. For instance, on the *Antisocial Behavior Total* scale, children's pre-test scores (M=64.6, SD=16.1) were higher when compared to post-test scores (M=63.5, SD=10.1); t(15)= -.563, p =.582. On the *Defiant/Disruptive* scale, there was a difference in the

pre-test scores (M=37.2, SD= 10.5) and post-test scores (M=36.1, SD=10.1); t(15) = -1.053, p = .309. A Wilcoxon Signed- Rank test indicated that the median post-test ranks (median rank= 26.0) on the *Antisocial/Aggressive* scale were not statistically significantly higher than the median pre-test ranks (median = 24.5), Z = -.656[b], *p* = .512. While *Scale B* scores did not significantly improve after Camp Geronimo, they are still noteworthy. (See Tables 3 and 4 for a complete report of all results from the paired samples t-tests and Wilcoxon Signed-Rank test).

Table 3

Pre- and Post- Test Mean Scores on the HCSBS

HCSBS Subscale	HCBSB Pre-test Mean Score	HCSBS Post-test Mean Score	*T*	*P* Value
Scale A: Social Competence TOTAL	81.50	86.31	3.089	.007
Scale A: Peer Relations (PR)	42.50	44.75	2.509	.024
Scale A: Self Management/Compliance (SMC)	39.00	41.50	2.825	.013
Scale B: Antisocial Behavior TOTAL	64.63	63.50	-.563	.582
Scale B: Defiant/Disruptive (DD)	37.19	36.06	-1.053	.309

Table 4

Pre- and Post- Ratings on the HCSBS Antisocial/Aggressive Sub-scale

HCSBS Subscale	HCSBS Pre-test Rating	HCSBS Post-test Rating	Z	*P* Value
Scale B: Antisocial/Aggressive (AA)	26.0	24.5	.656[b]	.512

Table 4.0 Pre- and Post- Ratings on the HCSBS *Antisocial/Aggressive* Sub-scale

A mixed ANOVA test was also employed to identify individual-level demographic characteristics that had a potential impact on the change in mean difference scores between pre-test and post-test. This test is often used when a dependent variable is measured over two or more time points, and when subjects have been broken into subgroups based on characteristics. The purpose of using a mixed ANOVA was to determine whether interaction effects existed between individual/family demographics and the change change in pre- and post- HCSBS scores. After examining interaction effects between all the demographic variables and HCSBS scores, the only variable that was identified as marginally significant was the impact of *annual household income* on the *Peer Relations* and *Social Competence Total* scales. There was a marginally significant interaction between annual household income and the *Peer Relations* mean difference score, $F(1, 11) = 14.2$, $p = .087$. There was also a marginally significant interaction between annual household income and the *Social Competence Total* scale, $F(1, 11) = 19.3$, $p = .084$. In both instances, it was found that the children from lower income households displayed greater change on the *Peer Relations* and *Social Competence Total* scale scores.

Finally, a post-camp satisfaction survey was administered to parents to capture their satisfaction with the Camp Geronimo experience. Surveys were distributed to all sixty parents of Camp Geronimo participants. However, only 47 parents of children who attended Camp Geronimo completed the parent satisfaction survey. 40 of these 47 (85%) parents responded that they found Camp Geronimo "very beneficial" for their child. Additionally, 42 of these 47 (89%) parents rated their child's overall experience as "excellent," and 93% reported that they plan to enroll their child in Camp Geronimo in the summer of 2019.

CHAPTER SIX: Discussion

The results of this study align with trends in evidence-based practice literature regarding the use of AAI and its influence on the social participation of children with IDD. Trends in the literature reveal that the use of AAI had mixed and/or positive impacts on the social participation of children with IDD (Butler et al., 2015). In this study, results demonstrated that, among the child participants whose parents completed both a pre- and post- HCSBS assessment, there was a statistically significant increase in their scores on the *Scale A*: *Social Competence* sub-scales, namely in *Peer Relations* (PR), *Self-Management/Compliance* (SMC), and their *Social Competence Total* scores. The results demonstrated that for the *Scale B*: *Antisocial Behavior* sub-scale and total scores, there were positive changes; however, these changes were not statistically significant. *Scale A* results parallel those in the literature, in which results from similar projects by McCune et al. (2014), Deleau (2012), Farnum & Martin (2012), and Pongasksri et al. (2017) all found an increase in positive social behaviors among children with IDD after the use of AAI as a therapeutic intervention. The latter three studies also similarly support the feasibility of using a standardized assessment to track social participation among children with IDD. *Scale B* results also align with themes found in the literature (McCune, McKenzie, O'Haire, & Slaughter, 2014; Allison, 2010), in that a decrease in negative social behaviors occurred in children with ASD following participation in AAI.

The results of this program evaluation were surprising in many ways. Because the majority of participants (81%) only attended Camp Geronimo for one week, a statistically significant change in the children's social behavior was not expected over such a short duration of time. In addition, it was hypothesized that a positive change, both statistically significant and otherwise, would be seen on at least one of the six subscales, but a significant change was

instead seen on all six subscales. Additionally, the mixed ANOVA results are worth noting and should be examined in future studies, as annual household income (an indicator of a family's socioeconomic status) was found to have a marginally significant effect on the change in *Peer Relations* and *Social Competence Total* scale scores from pre- to post- test among children from lower income households. This increased treatment effect among lower income families when compared to higher income families could potentially be due to their children's limited access to services/extracurricular activities when compared to those available to higher income families and should be examined to a greater degree in the future. Perhaps children from higher income families are involved in more extracurricular activities and, therefore, their progress in social participation was more gradual or had plateaued, while the children from lower income families who have gone without those experiences had a greater capacity for change. Children from lower income families could have also participated in more afterschool programs, thus leading to increased change in their pre- to post-test *Social Competence* sub-scale and total scores. This effect should be examined more in-depth in future studies.

These findings have implications for children with IDD and their parents, Camp Geronimo and The Barn at Spring Brook Farm. First, this program evaluation showcases the value of AAI in improving the social participation and social behaviors of children with IDD. This population faces occupational injustice as there are limited extracurricular activities available and accessible for children with IDD outside of skilled therapies. Not only does The Barn at Spring Brook Farm provide extracurricular activities for children with IDD, but it also legitimizes the use of animal assisted intervention as a therapeutic method to address social participation for children with IDD, an area of occupation that many children with IDD often demonstrate deficits in.

This program evaluation also demonstrates that even one week of participation in Camp Geronimo can result in postive improvements in the social participation and social behaviors of children with IDD. As identified in the needs assessment, this is one of the overarching reasons that parents send their children to the Barn in the first place. This finding demonstrates that the Barn meets the wants and needs of the parents who pay for the Barn's services for their children. Additionally, satisfaction surveys completed by parents helped identify areas in which parents were satisfied and feedback on how the Barn's programs could be improved moving forward. These parent responses will be helpful in planning Camp Geronimo in future summers.

Additionally, the success of this program evaluation of The Barn at Spring Brook Farm can highlight the Barn as a gold standard example of a programs that should be created for children with IDD. Not only should more organizations offer extracurricular activities for children with IDD, there should be an increase in the number of programs that offer animal assisted intervention. Due to the positive findings from this program evaluation and the consistencies found between the present evaluation and findings from prior studies, more funding should go towards creation of additional AAI programs. There should be increased advocacy for AAI to be covered by insurance funding and state and federal Medicaid Waiver programs as it has consistently shown to be an effective treatment method that can be utilized by occupational therapists and other health care professionals. Further research should be conducted to investigate AAI more in-depth, in order to increase advocacy and funding for AAI as a legitimate intervention method that positively influences social participation in children with IDD.

The positive findings that Camp Geronimo had on the social behaviors of participating children can also be used as evidence-based practice research used to persuade grant and other

external funders to provide greater funding for services provided at the Barn. Because this program evaluation achieved pilot success during Camp Geronimo, the Barn should implement the HCSBS, or a tool like it, into its 12-week long individual programs to continue to evaluate outcomes of their programming and generate even greater evidence of their success. Since the Barn's individual programs are longer in duration, more animal-intensive, and individualized based on the goals of the child/family, it is hypothesized that even greater change might be seen in HCSBS scores were it to be implemented as part of the Barn's other programming. Increased external funding would help to improve the Barn's services in a variety of different ways- this funding could be used to create a full-time position for an occupational therapist, improve marketing strategies, obtain more program resources, or increase scholarship amounts for children from low income households and/or families seeking therapeutic respite services.

Several limitations to this program evaluation are of importance to note. For example, the sample size was small, convenience sampling was used to recruit participants due to time and resources constraints, and there was a lack of randomization., all of which did not allow results to be generalized to a larger population of children with IDD. Additionally, there was a lack of blinding among study participants, so parents may have consciously or subconsciously skewed their responses on the HCSBS. Furthermore, there was no way to ensure that the same parent/guardian filled out both the pre- and post-HCSBS assessments. There was also no way to account for potential external influences or confounders of HCSBS results. Finally, because the HCSBS was administered after only 1-4 weeks of participation in Camp Geronimo, it was challenging to measure any lasting impacts that AAI may have had on children who participated in the program evaluation.

Based on the positive findings from this project, regular program evaluation should continue to be implemented at The Barn at Spring Brook Farm to continue to track the influence that Camp Geronimo has on the social participation of camp participants with IDD. Due to the success of this Camp Geronimo program evaluation, and the use of the HCSBS to measure social participation outcomes, additional program evaluation data can be collected from parents/guardians, administrators, and/or the occupational therapist on-site to continually track children's progress. Because the Barn's individual programming runs for a greater number of weeks than Camp Geronimo and are more AAI-intensive than the camp, there may be greater opportunities to demonstrate more significant and/or lasting impacts of AAI on children receiving these services. This program evaluation data is vital for the Barn's efforts to obtain more external funding and reimbursement in support of their services and to promote the use of AAI as a legitimate intervention for children with IDD and ASD.

CHAPTER SEVEN: Summary

Evidence on the effectiveness of AAI and its impact on social participation and social behaviors among children with IDD is limited. However, trends in available literature have demonstrated mixed and positive results regarding the influence of AAI on the social participation of children with IDD. This program evaluation project, implemented at The Barn at Spring Brook Farm, evaluated the influence of its AAI-based summer camp program, Camp Geronimo, and found statistically significant positive changes in social competence behaviors, and positive, yet not statistically significant, changes in antisocial aggressive behaviors. These results suggest that participation in Camp Geronimo positively influenced the social participation skills of children with IDD. Results from this program evaluation project can be used to improve future Barn programming and serve as quantitative evidence of the positive impact that the Barn

can have on children's social participation skills, which can be used to persuade external grant funders to support the Barn's services. These findings also support the provision of extracurricular activities for children with IDD who face occupational injustice in this area. These evaluation findings align with and add to existing literature on AAI's influence on social participation for this population, and can be used to advocate for the use of AAI as an effective occupational therapy intervention method. Further research should be conducted to continue to investigate the influence of AAI on the social participation of children with IDD, building upon preliminary findings from this program evaluation project.

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APPENDICES:

Appendix A:

Key Studies Informing the Study

Citation (1st author & year only)	**Study Purpose/Research Question**	**Design**	**Sample**	**Data Collection Strategies**	**Findings that Inform This Study**
Alison (2010)	Effects of incorporating canine intervention activities at home on social participation of children with ASD	Case Study	3 children with ASD	Observation - based scale	ASD, canine intervention activities, social participation
Bader (2010)	Observe changes in social participation skills of children with ASD after a summer camp program	Case study	12 children aged 3-7 with diagnoses of ASD	Observation -based scale	Key themes: Social participation, Peer relations, summer camp, ASD
Boyer (2014)	Animal assisted therapy facilitating social communication in children with language impairments	Case Study	Three children ages 4-8 with language impairments	Observation - based scale	Language impairments, animal assisted therapy, social communication
Butler (2015)	Systematic Review about 20 studies involving AAI and children with ASD	Systematic review	20 studies involving AAI and ASD	Systematic review	AAI, ASD, social participation
Chamberlain (2010)	Inclusion of children with ASD in typically developing classroom	Case study	79 children with ASD	Observation -based scale	Isolation, Peer relations

Deleau (2012)	Effectiveness of pet ownership on children with ASD	Non-randomized cohort study	260 individuals with ASD with life-long pets, introduction of pets, or no pets	Observation-based scale	Pet therapy, ASD, social participation
Farnum (2002)	Presence of dog vs toy dog on pro-social behaviors in children with PDD	Non-randomized cohort study	10 children with PDD	Observation-based scale	PDD, pro-social behaviors, AAI
Fortney (2006)	OT sessions incorporation animals vs traditional OT sessions on the effect of social participation in children with ASD	Non-randomized cohort study	22 children with ASD	Observation-based scale	Social participation, ASD, OT
McCune (2014)	Social functioning of children with ASD after introduction of AAI in a classroom	Non-randomized cohort study	64 students with ASD in 41 Australian classrooms	Observation-based scale	AAI, ASD, social participation
Pongsaksri (2017)	Effectiveness of incorporating elephant activities with children with ASD	Case study	4 studies with children with ASD and other disabilities	Observation-based scale	Elephant activities, ASD

Appendix B:

Needs Assessment Data Collection Strategies

Strategy	Description of Tool	Who	When
Interview	Semi-structured questionnaire consisting of 12 questions	Staff and parents	On site during two week needs assessment period
Observation	Two-week on site observing animal care, staff meetings, and site	Staff, site, animals	On site during two week needs assessment period, phone conversations, one-on-one and group meetings following needs assessment period

Appendix C:

Data Collection Tool for Needs Assessment

Questions for Staff:

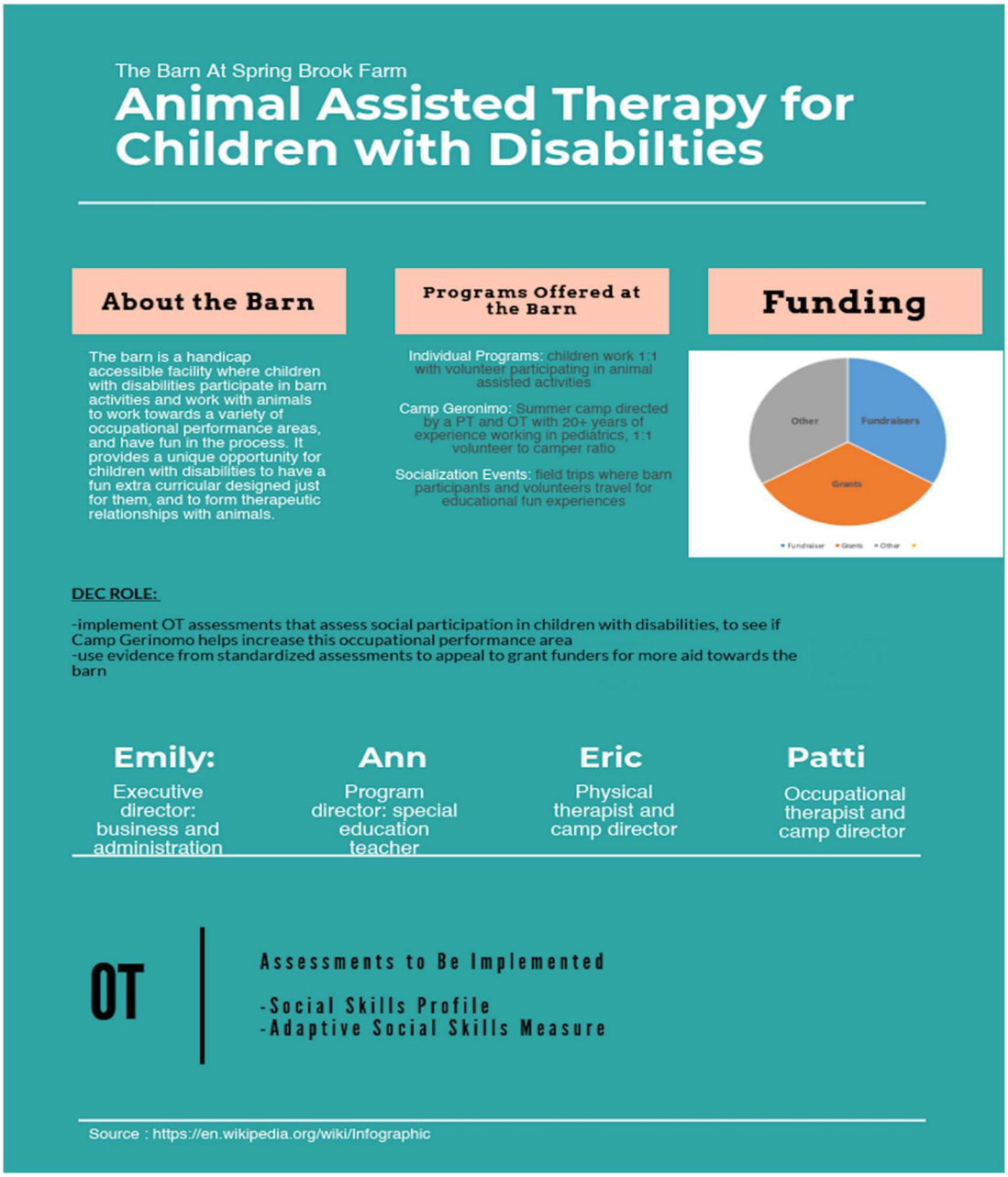
1. How many kids attend summer camp?
2. What are the main diagnoses of the kids who attend camp?
3. Is there an overwhelming majority of kids who share the same diagnoses?
4. What is the overwhelming age group of most of the campers?
5. How many activities do the kids do at camp every day?
6. What therapeutic outcomes do the activities the kids participate in work towards?
7. Do the kids get evaluated/have goals written before camp starts? If so, by who?
8. Do you use any formal assessments at this camp?

Questions for Parents:

1. Why did you want your child to come to the barn?
2. What goals do you have for your child from this program?
3. Are there any goals you'd like to address that the barn does not in their current summer camp program?
4. Has your child received occupational therapy before? If so in what setting (outpatient, school, etc.)

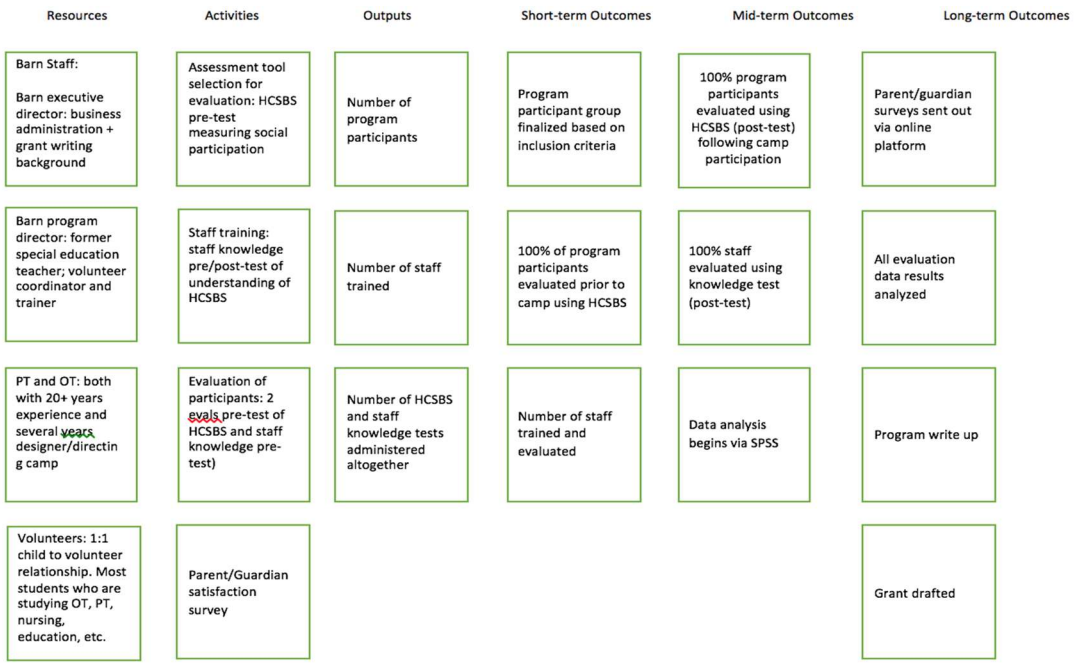
Appendix D:

Infographic with Results of Needs Assessment



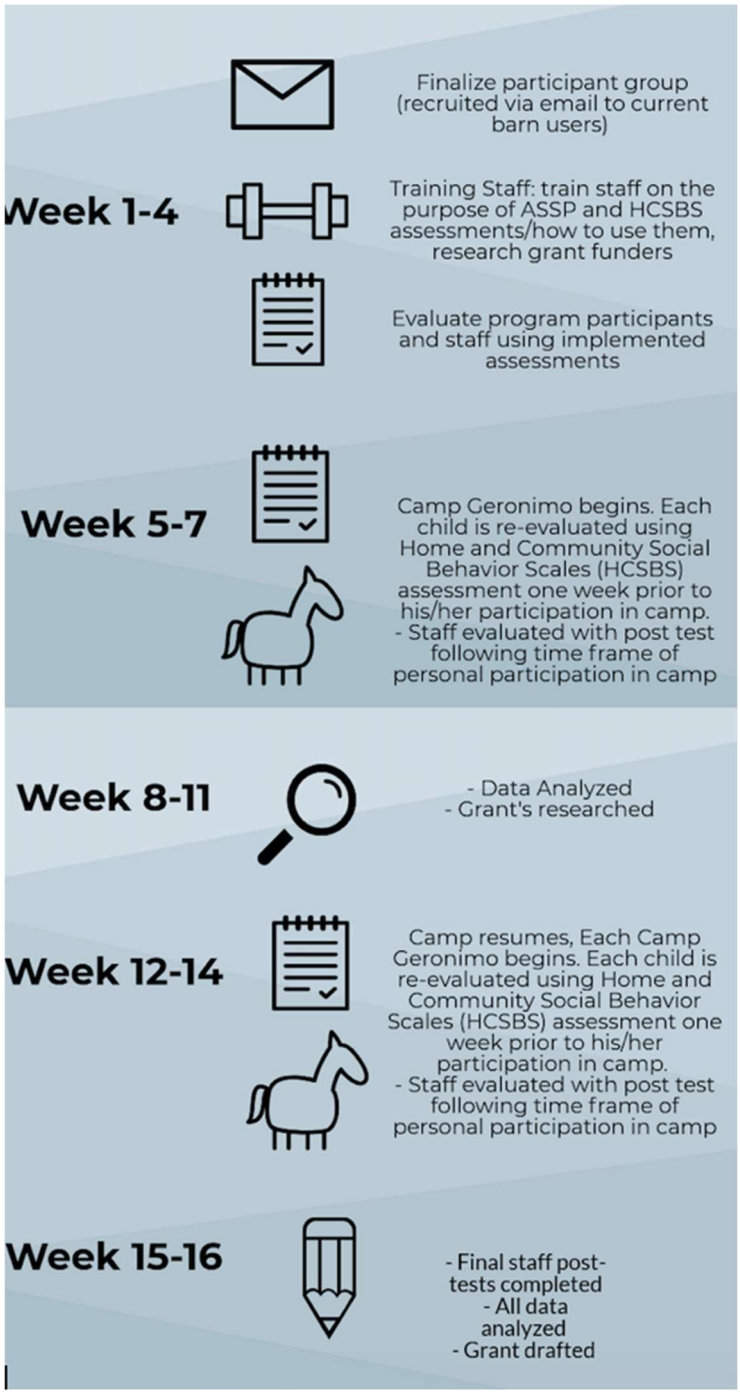
Appendix E:

Conceptual Model of the Program Evaluation



Appendix F:

Timeline



Appendix G

HCSBS Form

An online sample pdf of the HCSBS can be found through this link Merrell, K. (2002). *The home and community social behavior scales rating scale*. Retrieved from http://archive.brookespublishing.com/documents/hcsbs-sample.pdf

Appendix H

Parent/Guardian Satisfaction Survey From Camp Geronimo at The Barn at Spring Brook Farm

Camp Geronimo Parent Survey

Thank you for enrolling your child in Camp Geronimo 2018. We hope that your child thrived at our camp and realized the many benefits. We are asking for your feedback in this survey in order to continually improve Camp Geronimo. As you answer the following questions, please be specific so that we can use your thoughts to serve your child even better in the future. Thank you for your continued support!

We hope to see you and your family at The Barn's Summer Splash socialization event on Saturday, July 14 from 12:00-3:00PM, if not before.

Please circle your answer for each question and provide descriptions where requested.

1. **How many years has your child attended Camp Geronimo?**

   1 2 3 4 More than 4

If your camper has attended before this year, how did camp this summer compare to previous years at camp?

2. **How many weeks of Camp Geronimo did your child attend this year?**

   1 2 3 4 5

3. **Do you plan to enroll your child in Camp Geronimo in 2019?**

   YES NO

If no, please describe your reason:

4. **Please provide your feedback on the cost of Camp Geronimo?**

5. **How beneficial do you think Camp Geronimo was for your child?**

Very Beneficial **Beneficial** **Slightly Beneficial** **Not Beneficial**

Please explain:

6. Please rate the following aspects of Camp Geronimo:

Registration Process

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Sign In/Sign Out Procedures**

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Camp Leadership**

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Camp Counselors**

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Child's Overall Experience**

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Camp Communication with your family**

Excellent **Good** **Adequate** **Poor**
Please explain or share suggestions for improvement:

- **Friday Ceremony**

Excellent Good Adequate Poor
Please explain or share suggestions for improvement:

7. **What ideas do you have to improve Camp Geronimo?**

8. **Are you interested in your child participating in our year-round programs, such as the Individual Programs in the fall, spring and summer and our Socialization Events each quarter?**

YES, we already participate	YES, we would like to participate please contact us	No, we are not interested in participating

If you are interested in learning more about our year-round programs or enrolling your child for the upcoming term of our Individual Program, please include your contact information at the end of this survey.

9. **OPTIONAL: Name, Phone Number, Email, Mailing Address**

Appendix I

Demographic Questionnaire

Program Evaluation of Camp Geronimo Research Project

Demographic Data Sheet

We appreciate parents agreeing to participate in the project by sharing information on the questions below. The questions help us establish a baseline of data regarding the varied needs of the children in our Camp program. Your answers will help the researcher and The Barn at Spring Brook Farm improve the quality of our programs and provide specific data for grant funding.

As stated in the attached letter, participation also requires parents to complete two *Home and Community Social Behavior Scales* (HCSBS), one to fill out prior to your child's first day of camp, and the second to fill out and return to following your child's last day of camp.

All information will remain anonymous and used in this research project only. We appreciate your participation. Thank you!

1. What is your child's gender?
- Female
- Male
- Non-binary
- Transgender
- Prefer not to answer

2. How old is your child? _____

3. What is your child's ethnicity?
- Asian
- Black/African American
- Hispanic/Latinx
- Native American
- Pacific Islander
- White/Caucasian
- Prefer not to answer
- Other; please specify: _____

4. How many siblings does your child have?
- 0

- 1
- 2
- 3
- 4+

5. Please circle any option that describe your child's diagnoses/disability:

- Autism (including Aspergers and Pervasive Developmental Disorder-NOS)
- Cerebral palsy
- Developmental Delay
- Down syndrome
- Epilepsy/Seizure disorder
- Intellectual disability
- Learning disability
- Traumatic Brain Injury
- Other neurological impairment (e.g., Tourette's Syndrome, Prader-Willi)
- Undetermined at this time

6. How far do you travel to get to the barn?
- Less than 10 miles
- 11-15 miles
- 16-20 miles
- 21+ miles

7. What is your annual household income?
- Less than $30,000
- Between $31,000- $50,000
- Between $51,000-70,000
- Between $71,000-90,000
- $100,000+
- Prefer not to answer

8. How many other extracurricular activities does your child participate in?
- 0
- 1-2
- 3-4
- 5+
9. If applicable, please list some of these extracurricular activities:

_____

10. How many years has your child attended Camp Geronimo?
- This is his/her/their first year
- 2 years
- 3 years

- 4 years
- 5 years
- 6 years

11. How many years has your child participated in the Barn's other services (individual programs/socialization events/field trips, etc.)?

- This is his/her/their first year
- 1-2 years
- 3+ years